

REMARKS

At the outset, the Applicants thank the Examiner for the thorough review and consideration of the subject application. The Final Office Action of October 21, 2003 has been received and its contents carefully reviewed.

Claims 1-20 remain pending in the present application, where the Applicants request that the Examiner enter the above-identified amendments for claims 12 and 20. Applicants respectfully submit that the present amendment raises no new matter or issues that would require further consideration and/or search because (1) claims 12 and 20 were amended to include an element which was previously and identically amended into claim 1; and (2) the combination of references used in rejecting all of the elements of claim 1 are the same combination of references used in rejecting corresponding elements in claims 12 and 20.

In the Office Action, the Examiner rejected claims 1, 3-5, and 7 under 35 U.S.C. § 103(a) as unpatentable over Harada et al. (U.S. Patent No. 5,361,152) in view of Yamamoto (JP Pub. No. 59-195222) and Mochizuki et al. (U.S. Pat. No. 5,348,685); rejected claims 6, 12, 14, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al.; rejected claims 10, 11, 18, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. and further in view of Kim et al. (U.S. Pat. No. 5,742,370); rejected claims 8, 9, 16, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. and further in view of Abe (U.S. Pat. No. 5,511,591); and rejected claims 2, 13, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. and further in view of Asano et al. (U.S. Pat. No. 4,974,940).

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The aforementioned rejections are traversed and reconsideration of the claims are respectfully requested in view of the following remarks.

The rejection of claims 1, 3-5, and 7 under 35 U.S.C. § 103(a) as unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. is respectfully traversed and reconsideration is requested.

As a preliminary matter, Applicants note that, in the outstanding Office Action, the Examiner states "...the examiner notes two differences between the method of *Yamamoto* and that of the present specification: in the present invention, the seal is placed on the first substrate before the substrates are attached to each other, while *Yamamoto* attaches them and then adds the seal..." (Office Action at 4.)

Applicants respectfully submit, however, the Examiner's interpretation of the present specification attempts to unduly narrow the scope of the present invention. For example, at page 9, lines 8-11, the specification as filed states "...as shown in Figure 4D, a seal pattern 16 is formed at the edges of the lower substrate 10 to prevent leakage of the liquid crystal. Finally, as shown in Figure 4E, an upper substrate 20... is attached to the lower substrate 10 via the seal pattern 16..." Accordingly, Applicants respectfully submit the Examiner's aforementioned interpretation of the present specification is not necessarily an exclusive analysis, prohibiting other renderings of the present invention.

Claim 1 is allowable over Harada et al. in view of Yamamoto and Mochizuki et al. in that claim 1 recites a combination of elements including, for example, "forming a seal material at edges of the first substrate after depositing the liquid crystal material." None of the cited references, including Harada et al., Yamamoto, or Mochizuki et al., singly or in combination, teaches or suggests at least this feature of the claimed invention.

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Applicants respectfully submit that claims 3-5 and 7 depend from claim 1 and, therefore, include all of the elements of claim 1. Accordingly, Applicants respectfully submit that claims 3-5 are also allowable over Harada et al. in view of Yamamoto and Mochizuki et al. by virtue of their dependence from claim 1.

In rejecting claims 1, 3-5 and 7, the Examiner cites Harada et al. as disclosing an LCD fabrication method, comprising “depositing a liquid crystal material ..., forming a seal material ... at the edges of one substrate...” The Examiner then states “[Harada et al.] does not disclose forming a seal material after depositing the liquid crystal material.” In attempting to cure the deficiencies of Harada et al., the Examiner cites Yamamoto as disclosing “forming a seal material after depositing the liquid crystal [see the series of steps in Fig. 3].” The Examiner then concludes it would have been obvious to “...use the method of [Yamamoto] in making the device of [Harada et al.], motivated by [Yamamoto]’s teaching that this method makes it possible ‘to remove excessive liquid crystal’ and seal the panel so that ‘the sealing resin is not spread’ and a ‘wide display window can be obtained’ [see p. 5 of the translation].” The Examiner further alleges that the benefits obtained through Yamamoto (i.e., the ability to remove “excessive liquid crystal” and preventing the “sealing resin” from spreading) are advantageous over the “reverse order,” wherein the “reverse order” apparently involves “placing the seal down first.” (Office Action at 4.)

As the Examiner is no doubt aware, references must be considered in their entirety before making a determination of obviousness under 35 U.S.C. § 103(a). See M.P.E.P. § 2141.02. Moreover, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the references also suggest the desirability of the combination. See M.P.E.P. § 2143.01.

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Applicants respectfully submit that the inventive concept of Yamamoto, when read in its entirety, is directed to overcome the disadvantages of the prior art concept illustrated in Figure 1 of Yamamoto (see page 3 of the translation of Yamamoto). Nowhere in Yamamoto is it stated that the inventive concept of Yamamoto offers advantages over a singular fabrication step of “placing the seal down first,” as asserted by Examiner. Absent some teaching to the contrary, it is respectfully submitted that problems inherent in the prior art concept of Yamamoto cannot, without the benefit of the disclosure of the present application, be artificially assigned to a specific fabrication step when the problems associated with the prior art concept of Yamamoto are manifested upon completion of all fabrication steps required to form the prior art concept of Yamamoto.

For example, the prior art concept of Yamamoto provides a liquid crystal panel composed of two glass substrates 1 and 1' that are sealed together using a sealing resin 2 (see page 2 of the translation of Yamamoto). Liquid crystal 3 is injected between the substrates through a sealing hole formed in the sealing resin 2 (see page 3 of the translation of Yamamoto). According to Yamamoto, use of the aforementioned prior art concept is disadvantageous because “the sealing resin 2 is pressed by two glass substrates 1, 1’” and therefore “the sealing resin 2 is spread by between the glass substrates 1, 1’, resulting in reducing the size of a display window of an apparatus...” (see page 3 of the translation of Yamamoto). In light of the actual teaching of Yamamoto, Applicants respectfully submit that the disadvantages associated with the prior art concept of Yamamoto are realized at least when two substrates are pressed and joined together with sealant resin prior to injection of liquid crystal material, not merely by “placing the seal down first,” as asserted by the Examiner.

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To overcome the disadvantages of the aforementioned prior art concept of Yamamoto, the inventive concept of Yamamoto includes a liquid crystal panel formed by placing a “fixed quantity of liquid crystal 3... on the glass substrate 1 (Fig. 3B)... [placing]... the second substrate 1’ on the liquid crystal 3... (Fig. 3C)... [cooling the first and second substrates and liquid crystal] to a low temperature to freeze the liquid crystal (Fig. 3D)... [removing] ...excessive liquid crystal... [and] ...sealing with the sealing resin 6.” (see p. 4 of the translation of Yamamoto).

In light of the teachings of Yamamoto, in their entirety, Applicants respectfully submit that the method by which the inventive concept shown in Figure 3 of Yamamoto is formed can be reasonably understood to be advantageous over the method by which the prior art concept shown in Figure 1 of Yamamoto is formed. Applicants respectfully submit that it cannot, however, be reasonably understood that the method by which the inventive concept shown in Figure 3 of Yamamoto is advantageous over a singular, isolated fabricating process step wherein sealant resin 2 is placed onto substrates, “first.” Accordingly, Applicants respectfully submit that the inventive concept of Yamamoto provides advantages over the prior art concept as a whole (preventing the sealing resin from spreading and obtaining wide display window can (see p. 5 of the translation of Yamamoto)) where the prior art concept shown in Figure 1 of Yamamoto provides a liquid crystal panel by sealing two substrates together using a sealant material followed by injecting liquid crystal material through an injection hole formed in the sealant material and between the sealed substrates.

Further, while the LCD of Harada et al. is formed, at least in part, by forming the sealant portion 2 on the substrate 1 prior to forming the FLC composition 3 on the substrate 1, it cannot be reasonably asserted that the methods by which the LCD of Harada et al. and

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the steps required in forming the prior art concept illustrated in Figure 1 of Yamamoto are the same or even similar.

For example, the LCD of Harada et al. is formed by forming “a curable sealant...onto the periphery of the side of [a substrate] 1, whereby a sealant portion 2 is provided. Then, as shown in FIG. 1b, FLC composition... is ...applied to the portion surrounded by the sealant portion 2, so as to form a coated layer of FLC...” Subsequently, “as shown in FIG. 1c, the other [substrate] 4 which is neither printed with a sealant nor coated with a liquid crystal is placed either in vacuo or at atmospheric pressure in such a way that the side of said [substrate] which has an electrode... faces the side of the [substrate] 1 that includes the coated layer of the ...FLC...” (see, for example, column 3, line 4 – column 5, line 45 of Harada et al.).

In view of the actual teachings of Harada et al. and Yamamoto, Applicants respectfully submit that the methods disclosed by Harada et al. and the prior art concept shown in Figure 1 of Yamamoto are entirely different from each other. Since the methods of Harada et al. and the prior art concept of Yamamoto are completely different from each other, Applicants respectfully submit that the aforementioned disadvantages of the prior art concept of Yamamoto (spreading of the sealing resin 2 and reduction in size of the display window) are not present in Harada et al. Therefore, Applicants respectfully submit that one of ordinary skill in the art would not be motivated to modify Harada et al. using the teachings of the inventive concept illustrated in Figure 3 of Yamamoto “so that ‘the sealing resin is not spread’ and a ‘wide display window can be obtained’,” as asserted by the Examiner. Absent some objective reason to modify Harada et al., Applicants respectfully submit that Harada et al.

al. and Yamamoto have merely been combined using the claimed invention as a template via impermissible hindsight reasoning.

In the “Response to Arguments” section of the outstanding Office Action, the Examiner alleges that the arguments presented in the Reply Under 37 CFR § 1.111, filed on July 31, 2003 (and essentially replicated above) are not persuasive because “the two methods [of Harada et al. and the prior art concept of Yamamoto] are sufficiently similar that the motivations for using [Yamamoto]’s method … apply to both [Yamamoto]’s prior art and the method of [Harada et al.]” According to M.P.E.P. § 707.07(f), however, the Examiner should, “if he or she repeats the rejection, take note of the applicant’s argument and answer the substance of it.” Applicants respectfully submit that by merely stating “…the two methods are sufficiently similar that the motivations for using *Yamamoto*’s method …apply to both *Yamamoto*’s prior art and the method of *Harada*,” and concluding “One of ordinary skill in the art… would therefore have found it obvious…” does not answer the substance of the Applicants above identified arguments.

Absent any actual reasoning to support the Examiner’s conclusion that the prior art concept of Yamamoto and Harada et al. are “sufficiently similar,” to provide sufficient motivation to combine the references, Applicants respectfully submit that the two methods of Harada et al. and the prior art concept of Yamamoto are not “sufficiently similar” for at least the reasons stated above. To reiterate, the prior art concept of Yamamoto includes an injection method wherein substrates are attached together with a sealing resin and wherein liquid crystal material is injected between the attached substrates. The prior art concept of Yamamoto is disadvantageous, however, because the sealing resin 2 in the prior art concept of Yamamoto spreads. The spreading of the sealing resin 2 causes the size of the display

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window to be reduced (see page 3 of the translation of Yamamoto). Contrary to the prior art concept of Yamamoto, Harada et al. forms an LCD by forming a sealant material 2 on a substrate, depositing liquid crystal material 3 on the substrate supporting the sealant material 2, and attaching another substrate 4 to the substrate 1 supporting the sealant material 2 and liquid crystal material 3.

For at least the reasons set forth above, Applicants respectfully contend that claims 1, 3-5, and 7 are allowable over Harada et al. in view of Yamamoto and Mochizuki et al. and request that the Examiner withdraw the rejection of claims 1, 3-5, and 7 under 35 U.S.C. § 103(a).

The rejection of claims 6, 12, 14, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. is respectfully traversed and reconsideration is requested.

Claim 6 depends from independent claim 1 and, therefore, includes at least the aforementioned combination of elements set forth in claim 1. As described above, Harada et al. in view of Yamamoto and Mochizuki et al. fails to teach or suggest at least the features of independent claim 1 as recited above. Accordingly, Applicants respectfully submit claim 6 is allowable over Harada et al. in view of Yamamoto and Mochizuki et al. by virtue of its dependence from claim 1.

Claim 12 is allowable over Harada et al. in view of Yamamoto and Mochizuki et al. in that claim 12 recites a combination of elements including, for example, “forming a seal material at edges of the first substrate after depositing the liquid crystal material.” None of the cited references, including Harada et al., Yamamoto, or Mochizuki et al., singly or in combination, teaches or suggests at least this feature of the claimed invention.

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Applicants respectfully submit that claims 14 and 15 depend from claim 12 and, therefore, include all of the elements of claim 12. Accordingly, Applicants respectfully submit that claims 14 and 15 are also allowable over Harada et al. in view of Yamamoto and Mochizuki et al. by virtue of their dependence from claim 12.

For at least the reasons set forth above, Applicants respectfully contend that claims 6, 12, 14, and 15 are allowable over Harada et al. in view of Yamamoto and Mochizuki et al. and request that the Examiner withdraw the rejection of claims 6, 12, 14, and 15 under 35 U.S.C. § 103(a).

The rejection of claims 10, 11, 18, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. and further in view of Kim et al. is respectfully traversed and reconsideration is requested.

Claims 10, 11, 18, and 19 variously depend from independent claims 1 and 12 and, therefore, include at least the aforementioned combination of elements set forth in claims 1 and 12. As described above Harada et al. in view of Yamamoto and Mochizuki et al. fails to teach at least the aforementioned combination of claimed elements. Kim et al. was cited as allegedly disclosing the various elements of claims 10, 11, 18, and 19. Even if Kim et al. actually does disclose the various elements asserted by the Examiner, the Applicants respectfully submit Kim et al. fails to cure the aforementioned deficiencies of Harada et al. in view of Yamamoto and Mochizuki et al. Accordingly, the Applicants respectfully submit that claims 10, 11, 18, and 19 are allowable over Harada et al. in view of Yamamoto, Mochizuki et al., and Kim et al. by virtue of their dependence from either claim 1 or claim 12.

For at least the aforementioned reasons, the Applicants respectfully request that the Examiner withdraw the rejection of claims 10, 11, 18, and 19 under 35 U.S.C. § 103(a).

The rejection of claims 8, 9, 16, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. and further in view of Abe is respectfully traversed and reconsideration is requested.

Claims 8, 9, 16, and 17 variously depend from independent claims 1 and 12 and, therefore, include at least the aforementioned combination of elements set forth in claims 1 and 12. As described above Harada et al. in view of Yamamoto and Mochizuki et al. fails to teach at least the aforementioned combination of claimed elements. Abe was cited as allegedly disclosing the various elements of claims 8, 9, 16, and 17. Even if Abe actually does disclose the various elements asserted by the Examiner, the Applicants respectfully submit Abe fails to cure the aforementioned deficiencies of Harada et al. in view of Yamamoto and Mochizuki et al. Accordingly, the Applicants respectfully submit that claims 8, 9, 16, and 17 are allowable over Harada et al. in view of Yamamoto, Mochizuki et al., and Abe by virtue of their dependence from either claim 1 or claim 12.

For at least the aforementioned reasons, the Applicants respectfully request that the Examiner withdraw the rejection of claims 8, 9, 16, and 17 under 35 U.S.C. § 103(a).

The rejection of claims 2, 13, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Harada et al. in view of Yamamoto and Mochizuki et al. and further in view of Asano is respectfully traversed and reconsideration is requested.

Claims 2 and 13 variously depend from independent claims 1 and 12 and, therefore, include at least the aforementioned combination of elements set forth in claims 1 and 12. As described above Harada et al. in view of Yamamoto and Mochizuki et al. fails to teach at

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least the aforementioned combination of claimed elements. Asano was cited as allegedly disclosing the various elements of claims 2 and 13. Even if Asano actually does disclose the various elements asserted by the Examiner, the Applicants respectfully submit Asano fails to cure the aforementioned deficiencies of Harada et al. in view of Yamamoto and Mochizuki et al. Accordingly, the Applicants respectfully submit that claims 2 and 13 are allowable over Harada et al. in view of Yamamoto, Mochizuki et al., and Asano by virtue of their dependence from either claim 1 or claim 12.

Claim 20 is allowable over Harada et al. in view of Yamamoto, Mochizuki et al., and Asano in that claim 20 recites a combination of elements including, for example, "forming a seal material at edges of the first substrate after depositing the liquid crystal material." None of the cited references, including Harada et al., Yamamoto, Mochizuki et al., or Asano, singly or in combination, teaches or suggests at least this feature of the claimed invention.

For at least the aforementioned reasons, the Applicants respectfully request that the Examiner withdraw the rejection of claims 2, 13, and 20 under 35 U.S.C. § 103(a).

Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited. Should the Examiner deem that a telephone conference would further the prosecution of this application, the Examiner is invited to call the undersigned attorney at (202) 496-7500.

Applicant hereby authorizes the Commissioner of Patents to charges any fees necessary to complete this filing, including any fees required under 37 C.F.R. §1.136 for any necessary Extension of Time to make the filing of the attached documents timely, or credit any overpayment in fees, to Deposit Account No. 50-0911.

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Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. §1.136 for the necessary extension of time.

Respectfully submitted,

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By _____



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